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Letter to the Editor

The Hospital Anxiety and Depression Scale (HADS) is dead, but like Elvis, there will still be citings

We apologize to readers if we were unclear about our reasons for calling for the abandonment of the HADS [1] and we thank Sam Norton and colleagues for providing an occasion for us to clarify. Our jumping off point was indeed a review by Cosco and colleagues [2] demonstrating considerable inconsistency in the latent structure of the HADS. However, for us, the Cosco et al. analyses served as an impetus for considering the numerous structural, conceptual, and psychometric problems of this instrument that have led to wildly inconsistent findings and recommendations for cutpoints in what has now become a thoroughly confused literature.

Attempting to restore order in the apparent chaos of structural analyses of the HADS, Norton and colleagues point out that two thirds of the confirmatory factor analysis models support a three factor solution, which can be described theoretically as autonomic anxiety, anhedonic depression, and negative affectivity. They similarly note that the tripartite theory suggests a general psychological distress factor with specific components of anhedonic depression and autonomic anxiety. Neither of these solutions provides much consolation to clinicians and researchers who seek to use the two subscales as a straightforward means of assessing severity of anxiety and depressive symptoms as these concepts are generally understood, or for providing the first stage in a two stage screening process for anxiety and depressive disorders.

We encourage any readers we may have confused to take a look at a copy of the HADS (<http://pallipedia.org/term.php?id=627>). The first six items alternate between positive and reverse worded items indicating negative affect, but the seventh item breaks with this pattern. Furthermore, going from item to item, the first available response option shifts from “most of the time,” to “definitely as much,” to “very definitely and quite badly” to “as much as I always could,” to “a great deal of the time,” to “not at all,” to “definitely.” The “not at all” is for the item “I feel cheerful” and the “definitely” is for the item “I can sit at ease and feel relaxed.” A number of items are ambiguous as to whether they refer to actual level of negative affect or to a comparison with ‘usual’. Perhaps, as Zigmond and Snaith [3] apparently intended, the alert anxious or depressed patient immediately gets oriented in the transition from the first to the second item to pay careful attention to shifts from positive to reverse worded items, as well as to reversals and simple inconsistency in response options, but we wish to see the data that indicate that this carefulness occurs with any regularity.

Examining the specific items, we note the arbitrary constriction of breadth of content, which interferes with grading patients reliably and validly on continua of anxiety and depressive symptoms or providing an efficient first stage screening before interviewing patients to determine whether they meet formal diagnostic criteria for an anxiety or depressive disorder. Zigmond and Snaith's [1] idiosyncratic conception of the core symptom of depression as being anhedonia lead to oversampling of item content presumed to tap that conception and reduced applicability to the mild to moderate range of sad or blue symptoms of depression where many medically ill patients without

psychiatric disorder fall. Their assumption that avoidance of somatic items would increase the diagnostic accuracy of the HADS has simply proven the reverse and may limit refined discrimination of severity of symptoms. Zigmond and Snaith's alternative strategy of relying on now quaint colloquial British expressions came at the expense of discouraging any uptake of the scale in North America and frustrating any hope of literal translation or even decision-making about conceptual equivalence.

Norton and colleagues defend the limitations of the HADS as being shared with other instruments and cited as a support two reviews of the HADS. The Bjelland et al. [4] meta-analysis is flawed by its indiscriminate combining of studies using the HADS in English with those using translated versions of the HADS, generally without adequate revalidation of the translated instrument. Although not as systematic or methodologically sophisticated, it largely corroborates Cosco and colleagues' [2] findings of different factor solutions in different populations. In contrast, Brennan and colleagues [5] employed more sophisticated strategies to pool across studies, but hardly provided a glowing endorsement of the HADS. They found a high study heterogeneity of 92% for diagnostic odds ratios, with particular problems for the anxiety disorders. The sensitivity of 0.56 for major depression would be considered inadequate for many clinical applications. Reflecting the quality of the HADS literature, data from a number of studies could not be included because authors had simply failed to report basic statistics for the recommended cutoffs or ROC curves from which these statistics could be inferred. Brennan and colleagues also noted that the HADS did not perform as well as other instruments such as the BDI in primary-care settings.

Zigmond and Snaith's [3] creative efforts of 30 years ago to construct brief means of assessing anxiety and depression should not be judged by contemporary standards. But we should insist on contemporary standards in evaluating the continued use of the HADS now. Norton and colleagues end with a suggestion that revisions be undertaken to the item wording or response scales of the HADS. This would raise a number of concerns. First, what is so sacred about the narrow band of content of the HADS items that should be preserved? Second, there is the risk that a thorough revision of the HADS would lend false credibility to the existing instrument and continued reliance on the flawed and misleading literature it has generated.

A briefer reply to our commentary by Doyle and colleagues does not dispute our scathing critique of the HADS, but nonetheless pleads that the measure not be buried yet because of its purported powerful prediction of mortality in patients with cardiovascular disease. Doyle et al. cite one of their studies [6] in which the depression scale of the HADS predicted mortality better than another measure of depression. These points deserve consideration. We are aware of similar studies to the one cited by Doyle and colleagues, as well as many contradictory findings. Moreover, turning to the paper cited in their brief reply, the authors documented that the literature concerning prediction of mortality from depression related factors is fraught with non-replications and inconsistent findings.

We suggest much of any prognostic value of psychological factors with respect to mortality is largely due to unrecognized and

undercontrolled confounds and to the overfit regression equations that occur when too many variables are used to predict too few deaths [7], as well as to the known limitations predicting time of death in the short term from nonetheless strongly validated biomedical factors. We ask Doyle and colleagues to consider the similar performance of single-item assessments of self perceived health in predicting mortality. Like depression, these items can be shown to predict mortality, but their prognostic value largely disappears with good control of a full range of adequately measured biomedical factors in a sample having sufficient number of deaths to warrant multivariate analyses, particularly among persons who are not already quite ill at the time of assessment.

Doyle and colleagues identify a particular virtue of the HADS depression scale in its narrow focus on anhedonia and propose that its superior performance predicting mortality is due to this focus. It is difficult enough for patients to grasp the psychological concept of anhedonia, defined as a reduced ability to experience pleasure, and it is too much to expect that ill patients will discriminate the intended meaning from their experience of not wanting to engage in previously pleasurable activities because of pain, fatigue, and other physical impairment. This problem in discrimination plagues efforts to assess anhedonia with questionnaires rather than an interview in which the intended meaning of anhedonia can be explained and patients' responses probed to determine if they correctly interpret what is being asked. Self-report measures of anhedonia may be more related to mortality than is sadness because they are more confounded with physical illness. The emerging literature concerning anhedonia and death is thus fraught with conceptual and methodological problems that will only be compounded by reliance on the HADS, given this measure's idiosyncratic conceptualization of depression, construction of items, and resulting flawed psychometrics.

Investigators using the HADS are increasingly recognizing serious flaws arising from its basic conceptualization and construction, but are nonetheless defending its continued use. Undoubtedly the HADS was used in many unpublished data sets, and investigators who have worked to collect such data are intent on publishing papers. Despite the wisdom of declaring the HADS dead and moving on, we strongly

suspect that, like Elvis, there will be continued citations in the literature.

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